UNIVERSITY
OF MISSOURI
BULLETIN
COLUMBIA, MISSOURI

SCHOOL OF
VETERINARY MEDICINE

April 15, 1965

1965-66

University of Missouri

Schools and Colleges in Columbia:

College of Agriculture

School of Forestry

School of Home Economics

College of Arts and Science

School of Social Work and Community Development

School of Business and Public Administration

College of Education

College of Engineering

Graduate School

School of Journalism

School of Law

School of Medicine

School of Nursing

School of Veterinary Medicine

University Extension Division

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THE UNIVERSITY OF MISSOURI BULLETIN

Volume 66, Number 15 General 1965 Series Number 11

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Mary Kathryn Yeargain, Editor
Published five times monthly during March, April, September and October; four times monthly during August and November; three times monthly during January and May; twice monthly during February, June and July; once during December, by the University of Missouri Bulletin Editor's Office-206S Technical Education Services Building, 417 South Fifth St., Columbia, Mo. Second class postage paid at Columbia, Missouri, 5000. April 15, 1965.

SCHOOL OF VETERINARY MEDICINE

1965-66

UNIVERSITY OF MISSOURI

COLUMBIA

UNIVERSITY CALENDAR FOR 1965-66

(For the Divisions at Columbia)

First Semester

1965

September 8—Wednesday, New Student Orientation
September 9—Thursday, New Student Orientation and Registration
September 10—Friday, Registration, 8-12 a.m., 1-5 p.m.
September 11—Saturday, Registration, 8-12 a.m.
September 13—Monday, Classwork begins, 7:40 a.m.
November 24—Wednesday, Thanksgiving vacation begins, 5:30 p.m.
November 29—Monday, Classwork resumed, 7:40 a.m.
December 18—Saturday, Christmas vacation begins, 12:30 p.m.

1966

January 3—Monday, Classwork resumed, 7:40 a.m.
January 15—Saturday, Classwork first semester ends, 12:30 p.m.
January 17—Monday, Examinations begin
January 24—Monday, First Semester closes, 5 p.m.

Second Semester

January 27—Thursday, New Student Orientation and Registration, 8-5 p.m.
January 28—Friday, Registration, 8-12 a.m., 1-5 p.m.
January 29—Saturday, Registration continued, 8-12 a.m.
January 31—Monday, Classwork begins, 7:40 a.m.
April 2—Saturday, Easter recess begins, 12:30 p.m.
April 10—Sunday, Easter
April 11—Monday, Classwork resumed, 7:40 a.m.
May 28—Saturday, Classwork second semester ends, 12:30 p.m.
May 30—Monday, Final Examinations begin
June 2—Thursday, Final grades for candidates for graduation due, 12 noon.
June 6—Monday, Second Semester closes, 5:30 p.m.
June 7—Tuesday, Annual Commencement

Summer Session

June 13—Monday, Registration and Orientation
June 14—Tuesday, Classwork begins
July 4—Monday, Independence Day
August 5—Summer Session closes 5 p.m.
August 5—Summer Commencement, evening

Letter from the Dean:

This bulletin describes the approved academic program which has been designed to prepare the individual for a lifetime in a profession. It explains the credentials and qualifications required by the institution.

When the student elects to enter veterinary medicine it is clear that satisfying the requirements of the institution is only one part of the process involved. More complex is the process of self-examination. Each student first satisfies himself that a profession has been selected which will be stimulating and challenging, as well as gratifying and rewarding. Satisfactory "passing" of this self-examination is the most important factor in the entire process of preparing for a profession. Testimony of this truth is provided by noting that graduates in veterinary medicine traditionally continue in the profession throughout their lives.

Today the student who chooses this health profession finds Veterinary Medicine growing and expanding more rapidly than at any other period in history. Even students within the professional school continue to discover new applications of their training until the very day of graduation. No new entrant arrives at the school with a complete understanding of all the facets embraced within Veterinary Medicine. He is invariably surprised to gradually discover the multitude of opportunities extended to the veterinarian as all health professions accelerate their march to elevate the health standards of all living creatures.

B. W. Kingrey

HISTORY OF VETERINARY MEDICINE

Organized veterinary medicine in the United States was 100 years old in July of 1963. During the century, the scientific content of the profession steadily increased and the program of study leading to the Doctor of Veterinary Medicine degree was extended to five, and eventually, to a minimum of six years of college training.

The activities of the profession have adjusted to changing demands and veterinary medicine has emerged as a leading health profession. At present the demand for graduates is continually pulling away from the ability of the nation to train veterinarians. In recent years veterinary medicine has increased its dimension to include considerable activity in the human health related fields. The demand in these areas is superimposed upon a steadily growing demand for practitioners.

There are approximately 23,000 veterinarians in the United States and Canada. An estimated 900 new graduates join the profession each year.

CAREERS IN VETERINARY MEDICINE

The broad and intensive training of the veterinarian qualifies him to assume responsibilities in an extremely wide range of biology-related fields. He has training in anatomy, physiology, pharmacology, chemistry, botany, bacteriology, virology, pathology, parasitology, toxicology, public health, surgery, medicine, radiology and reproduction as well as other related areas. As a consequence of this broad training the graduate finds opportunities in a variety of fascinating fields. Each field has its special advantages and personal satisfactions. The choice depends mainly on personal preference.

Within the profession there are many associations and societies that conduct conferences and distribute scientific publications to the veterinarians in each field of interest.

Private Practice

About two-thirds of the veterinarians in the United States are in practice. There has been a gradual evolution of different kinds of practice. The practices are conducted by individual veterinarians, by partnerships or by groups of veterinarians.

1. LARGE ANIMAL PRACTICE.
   This form of practice is most often selected by graduates having a background of livestock experience. These veterinarians apply their scientific training to the problems of livestock, usually in rural areas.

2. SMALL ANIMAL PRACTICE.
   Small animal practice principally involves the health care of dogs and cats. Other pets such as birds and exotic species of animals are also treated. A growing number of modern hospitals with well-equipped surgeries and laboratories are being constructed by small animal practitioners across the nation.
3. GENERAL PRACTICE.
   When attention is given to both large animals and small animals the practice is referred to as a general practice. At times, group practices have veterinarians within the group who devote all of their attention to one or the other kinds of practice within the joint operation.
4. SPECIALTY PRACTICES.
   These include such specialties as equine practice, poultry practice and zoo practice.

Military Service

The United States Army and the United States Air Force commission veterinarians to serve as officers in their Veterinary Corps.

Veterinarians serving in this capacity have been credited with tremendously reducing food poisoning and other public health problems through their control over the sanitary and public health aspects of military bases.

U. S. Public Health Service and the Food and Drug Administration

One of the most rapidly expanding and interesting careers is the application of the broad training of the profession to those problems concerned with human health. Here the veterinarian works with the physician and other members of the health professions to protect the health of man.

Agricultural Research Service, U. S. Department of Agriculture

At present this service employs more veterinarians than any other single agency. It is responsible for assuring wholesome and accurately labeled food products of animal origin. Branches within the service are concerned with protecting the nation's livestock from foreign diseases and eradication or control of diseases within the country. The Animal Disease and Parasite Research Division employs full time research veterinarians working to further reduce livestock disease problems.

State Employment

Every state has a state veterinarian or livestock sanitary official whose duties are to guard the health of animals and humans by enforcing laws and regulations drawn for this purpose. In many states the state veterinarian has a staff of veterinarians doing laboratory and field work.

Many state health departments have one or more veterinarians on their staffs to aid in the control of animal diseases that are significant in human health and to investigate outbreaks of such diseases.

Practically every state college or university has a department employing from one to several veterinarians.

Municipal Government

In many cities and towns veterinarians are employed either full time or part time as members of the municipal health department. They serve to control the wholesomeness of the food utilized by its community and to enforce local disease control ordinances.

Veterinarians in Industry

Approximately 800 veterinarians are presently employed by biological and pharmaceutical producing companies or other commercial organizations concerned with the broad health field.

Biomedical Research

The step-up in biomedical research has been stimulated by growing financial support and by wider public acceptance of the need for health-related research. There has been a great acceleration, in recent years, of developments in both human and veterinary medicine through teamwork research.

Since the solution of most biological problems eventually leads to the living animal it is natural that animals are being used as "stand ins" for man in the study of radiation hazards, air-pollution, cancer research and biomedical instrumentations. The "man-in-space" program must be preceded by an "animal-in-space" program.

Comparative medicine is a rapidly developing area of opportunity through the medical-veterinary medical teamwork approach. The veterinarian is being sought in biomedical research and laboratory animal medicine.

VETERINARY MEDICAL EDUCATION IN THE UNITED STATES

There are 21 schools and colleges of veterinary medicine in the United States and Canada, each associated with a state college or university.

All require a mininum of two years of pre-veterinary college study for entrance, and four years of professional study for graduation and conferring of the D.V.M. degree. Subsequent passing of a state board examination is necessary to be licensed to practice in any state.

Entrance requirements and curricula may vary, but all colleges or schools must meet certain minimum requirements to qualify for accreditation by the Council on Education of the American Veterinary Medical Association.

UNIVERSITY OF MISSOURI SCHOOL OF VETERINARY MEDICINE

The School of Veterinary Medicine at the University of Missouri was established in 1949. A professional four year course leading to the degree, Doctor of Veterinary Medicine (D. V. M.) had been activated in fall of 1946 and the first class was graduated in 1950.

The School is located on the Columbia campus. Five departments conduct the teaching, research and service programs. In addition to courses for students in the professional curriculum, courses are offered for undergraduate and graduate credit to students in other related divisions of the University.

Veterinary Clinic-Hospital Building. This modern structure houses staff of clinical specialists and well-equipped surgeries and diagnostic facilities. Animals are presented for diagnosis and treatment. Students rotate through various clinical assignments for practical training and experience.

The School is fortunate in being one of the few located on the same campus with a College of Agriculture and a School of Medicine. Cooperative programs serve to strengthen the course content of the professional curriculum.

Facilities

CONNAWAY HALL is a three-story, stone building which houses the departments of Veterinary Anatomy, Veterinary Microbiology and Veterinary Pathology. There are classrooms, teaching laboratories and research laboratories for each department. This building also houses the Office of the Dean, the Director of Research Development and the Medical Illustrator.

THE VETERINARY SCIENCE BUILDING is a stucco building with offices, laboratories and accommodations for both large and small animals used for teaching and research. The School of Veterinary Medicine Library and the office of the Counselor for pre-professional students are also located in this building.

THE VETERINARY CLINIC-HOSPITAL BUILDING is an excellent new brick structure. The Clinic acts as a referral center for veterinarians in the entire state and adjacent areas. Animals are referred to the Clinic to make use of the specialized diagnostic equipment, well-equipped surgeries and the specialty training of the clinical staff. Within this building are the Diagnostic Laboratory and the Office of the Director of Veterinary Medicine Extension.

A VETERINARY MEDICAL RESEARCH FARM is located four miles north of the campus on a 90-acre tract, with laboratories and animal housing for research on diseases of farm animals and poultry. An additional area of 15 acres near the campus is also available for certain phases of the research and teaching program.

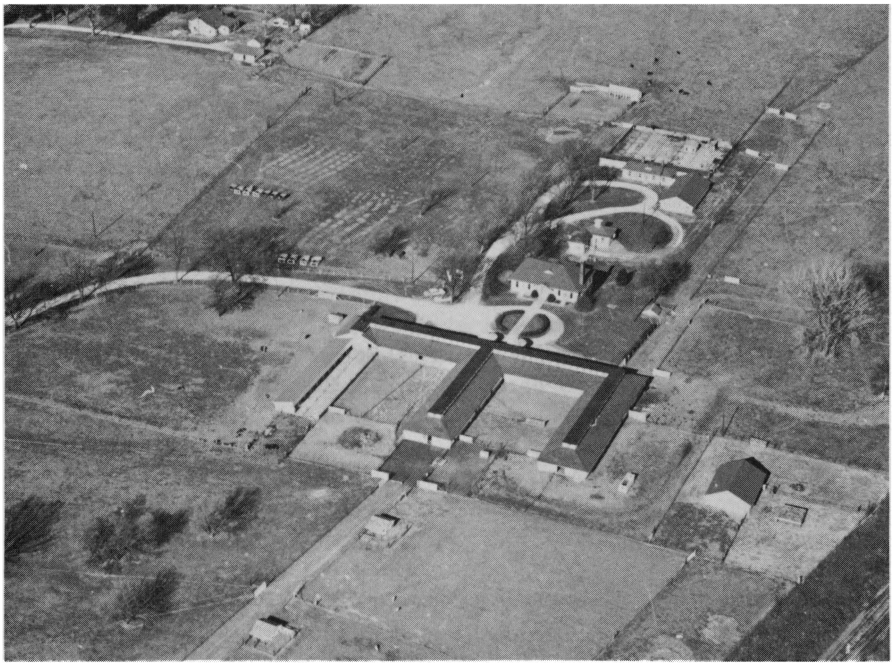
Related University Facilities

A number of interdisciplinary programs within the University provide additional facilities that may be utilized by the School of Veterinary Medicine. A large Nuclear Research Reactor Facility is under construction. Space in this building has been assigned to the School of Veterinary Medicine. A Space Science Environmental Physiology Building is also scheduled for construction. A Comparative Medicine Farm of 540 acres has been acquired by the University.

Immediately adjacent to the School of Veterinary Medicine is the Game Section of the State Conservation Commission. A staff of research biologists provide wildlife specimens and health problems for joint study with veterinary medical personnel.

The Ecology Field Station of the U.S. Public Health Service is housed near the School and collaborates with veterinary medical faculty on problems of comparative cardiovascular disease.

The slaughterhouse of the College of Agriculture is adjacent to the School. This provides an excellent opportunity for undergraduate instruction.



Laboratories and animal quarters of the Veterinary Medical Research Farm.

Library Facilities

A School of Veterinary Medicine Library is located in the Veterinary Science Building. It is a specialized library containing a wide variety of books and periodicals on veterinary medicine and related subjects.

Students may also use the library at the Medical Center. This is an excellent library with reading room, study room and carrels. It is open 99 hours weekly during the academic year.

The University General Library, recently expanded, remodeled and air-conditioned, is tenth or eleventh in size among all university library buildings in the nation.

Admission Procedures and Requirements

The study which leads to the Doctor of Veterinary Medicine (D. V. M.) degree requires six years of college work. The last four years must be taken in the School of Veterinary Medicine. The first two years (pre-professional) may be taken at any accredited college or university.

Application for admission to the School of Veterinary Medicine is made during the student's second pre-professional year. During the pre-professional study certain subjects must be taken.

Minimal Requirements for Admission:

A minimum of 64 semester hours, exclusive of ROTC and Physical Education, is required for admission to the School of Veterinary Medicine. The 64 semester hours must include the following or equivalent.

SUBJECTS	HOURS
English Composition	6
Humanistic Studies	6
Science and Mathematics (10 Biological Science: Zoology, Botany, etc.; 3 College Algebra; 5 Inorganic Chemistry; 3 Organic Chemistry)	21
Social Sciences	10
Electives (Courses in Animal Science, Genetics, Physics and additional courses in Chemistry are strongly recommended)	21

The minimal acceptable grade average is C (2.00)

Pre-Professional Curriculum

For students who elect to seek the degree, Bachelor of Science in Agriculture, in addition to the professional degree:

This degree may be conferred at the end of the second year in the professional school. To satisfy the requirements of the College of Agriculture the following pre-professional curriculum must be satisfactorily completed:

SUBJECTS	HOURS
English 1, Composition	3
English 2, Composition	3
Zoology 1, Introductory Zoology or Botany 1, General Botany	5
Chemistry 1, Introductory Chemistry, or Chemistry 11, General Chemistry	5
Agricultural Economics 1, Agriculture in the Economy	3
Agricultural Economics 50, or Economics 51, General Econ	5
Political Science 1 and 2, American Government, or History 20, American History	5
Mathematics 10, College Algebra	3
English 60, Exposition; or English 61, Technical Writing	3
Speech 175, Public Speaking	3
Animal Husbandry 1, Dairy Husbandry 1 or Poultry Husbandry 1	3
Chemistry 15, Elementary Organic Chemistry	3
Genetics 240, General Genetics; or Animal Husbandry 203, Animal Breeding	3

Animal Husbandry 202, Animal Nutrition 3
Electives 14

(Beginning in the fall of 1967, a 5-hour physics course will be added to the requirements for entrance to the School of Veterinary Medicine.)

Restricted Enrollment

The number of applicants which can be accepted is limited by available facilities. Since it is not possible to accept all eligible applicants, alternate goals in standard Bachelor of Science degree programs are urged for all pre-professional students. Most commonly the student designs his pre-professional program in such a manner that it could lead to a B.S. in the College of Agriculture or in the College of Arts and Science in case he is not admitted to the School of Veterinary Medicine.

Application Procedure

For Students Seeking Admission to the Professional School who are not currently enrolled at the University of Missouri:

1. Request forms on which to apply for admission to the School of Veterinary Medicine from the Office of the Dean, 104 Connaway Hall.
2. Return the completed forms to the Office of the Dean with copies of transcripts of credits earned and a list of courses presently being taken.
3. Applicants for admission to the professional course must take the Veterinary Medical Aptitude Test. Information concerning this test and a list of dates and places where the test is given are available from the Office of the Dean and will be sent to the applicant with other application forms.
4. Do not apply for admission to the University of Missouri until accepted by the School of Veterinary Medicine.

Application Procedure

For Pre-Professional Students who are enrolled at the University of Missouri:

A counselor for pre-professional students is available at the School of Veterinary Medicine. Students may contact his office at any time. All correspondence related to veterinary medical education should be addressed to the Dean, School of Veterinary Medicine, University of Missouri, Columbia.

Entrance to the School of Veterinary Medicine is only at the beginning of the fall semester of each school year. Application forms must be requested, completed and submitted not later than March 1 of the year in which admission is sought.

Pre-professional counseling is offered to students. The pre-veterinary medicine requirements may be satisfied at any accredited college or university.

FEES AND EXPENSES - per semester

Resident		Non-Resident	
Incidental Fee	$115.00	Incidental Fee	$115.00
Supplementary Fee-Vet. Med.	32.50	Supplementary Fee-Vet. Med.	32.50
Student Union and Activity Fees	10.00	Student Union and Activity Fees	10.00
	$157.50	Non-Resident Tuition	175.00
			$332.50

Effective September, 1965, each student entering the School of Veterinary Medicine must provide a microscope adequate to meet his needs and the requirements of the School of Veterinary Medicine. The microscope shall be inspected by the appropriate committee. A detailed list of specifications will be available upon request to the Office of the Dean. Estimated cost is $300-$450.

STUDENT HOUSING

Prospective students are urged to contact the Housing Office, 123 Jesse Hall, Columbia, either by mail or in person, when applying for admission to the University. They then will receive all of the available information on the housing situation.

University Housing

1. Single men and women. University residence halls are available for the accommodation of both men and women students. In addition to providing room and board, the residence hall program offers opportunities for social, recreational and cultural activities which provide students with a well-rounded life on campus.
2. Married students. Accommodations for married students are available in University-owned married student housing and in privately-owned apartments. A brochure which gives additional detailed information concerning student housing and application blanks may be obtained from the Housing Office. Additional housing is being added as construction continues on the campus.

Off-Campus Housing

All single students who do not live in University-operated housing, cooperatives, fraternities, sororities or homes of parents are required to live in rooms approved as student residences by the Director of Housing except in those cases where the student is 21 years of age (and is not on scholastic or disciplinary probation).

Sororities and Fraternities

Sororities and fraternities offer housing to both members and pledges of their organizations. Inquiries concerning these should be addressed to Director, Student Affairs for Women, or to Director, Student Affairs for Men, 100 Read Hall.

AIDS AND AWARDS

The Universtity has numerous scholarship and loan funds available. These are described in detail in a separate publication on Aids and Awards. Some of these scholarships are available only to students in the School of Veterinary Medicine:

Scholarships

UNIVERSITY OF MISSOURI BOARD OF CURATORS SCHOLARSHIPS. Two awards are made to outstanding students entering their first year in veterinary medicine. The scholarships cover the fees during the first year.

ANDONIE-FRYER SCHOLARSHIP. A stipend of $250 is awarded annually to a student in the School of Veterinary Medicine on the basis of scholastic attainment and financial need. Preference will be given to upperclass students.

AMERICAN BREEDERS SERVICE SCHOLARSHIP. To promote better understanding between the veterinarian and the A.I. technician, the ABS has established a scholarship for a forthcoming fourth year student. Attendance at the ABS Technical Training School is required to validate the scholarship.

DANFORTH SCHOLARSHIP. Two weeks of leadership training at the American Youth Foundation Camp near Stoney Lake, Michigan. Awarded to the most outstanding V.M. 1 student.

Loans

Students enrolling in the School of Veterinary Medicine should plan to provide all of their financial needs during the first year. This will make it possible for them to become established as professional students before applying for a loan from any of the funds for veterinary medical students.

THE MISSOURI STUDENT CHAPTER OF THE A.V.M.A. MEMORIAL LOAN FUND. Established in 1954, this fund was formerly called the Boyer-Matthews Memorial Fund in memory of two students who died during their

Laboratory instruction provides a basic scientific fund of information for the most logical application to clincal problems.

final year in school. Additional contributions to the fund have been made in memory of Marlyn Rhoades, deceased wife of a student in the school.

B. B. ROSEBOOM MEMORIAL STUDENT LOAN FUND. Established in 1957 by the Student Chapter of the A.V.M.A. in memory of the late B.B. Roseboom, Professor of Veterinary Physiology.

STANLEY N. SMITH MEMORIAL FUND. The family, friends and associates of Dr. Stanley N. Smith established this fund to commemorate his 58 years of service to the profession, 10 of which were on the faculty of the school.

THE SCHOOL OF VETERINARY MEDICINE ALUMNI ASSOCIATION LOAN FUND. This fund is maintained by the alumni of the school for third and fourth year students.

WOMEN'S AUXILIARY TO THE MISSOURI VETERINARY MEDICAL ASSOCIATION LOAN FUND. Established in 1950, it is the oldest loan fund available to veterinary medical students.

CENTRAL MISSOURI VETERINARY MEDICAL ASSOCIATION LOAN FUND. Available to third and fourth year students.

WOMEN'S AUXILIARY TO THE AMERICAN VETERINARY MEDICAL ASSOCIATION. Fourth year students are given preference; third year and graduate students are also considered. Maximum amount of a loan is $400; the interest rate is 2 per cent a year, the principal to be repaid in two years with the remainder due three years from date.

Additional information on these loan funds is available from the Director of Aids and Awards, 123 Jesse Hall.

Awards

UPJOHN AWARDS. A stipend and a certificate of award plus a fitted leather medical case are awarded to two fourth year students who show greatest proficiency in large and small animal clinical skills.

VETERINARY MEDICINE MAGAZINE AWARDS. Established by the late Dr. Robert L. Anderes, editor of "Veterinary Medicine". The awards are made to two fourth year students on the basis of greatest improvement in large animal clinical skills and small animal clinical skills. They consist of a stipend, certificate of award and subscription to "Veterinary Medicine."

THE MERCK AWARDS. Personalized copies of the "Merck Veterinary Manual" are presented to the students in the third year and fourth year classes who have the highest scholastic averages.

THE GAMMA SIGMA DELTA AWARD. The society annually honors a fourth year student who has demonstrated high academic and extracurricular achievement. The student's name is inscribed on a permanent plaque which hangs in the Veterinary Library in Veterinary Science Building.

THE MISSOURI VETERINARIAN AWARD. For the best case report prepared by a fourth year student the Missouri Veterinarian presents a $25 cash award and a $10 cash award for the runner-up.

PFIZER AWARD. A $400 award to the third year student selected on the basis of scholarship, leadership and financial need.

THE PITMAN-MOORE AWARD. A plaque presented to an individual serving on the publications staff of the Missouri Veterinarian.

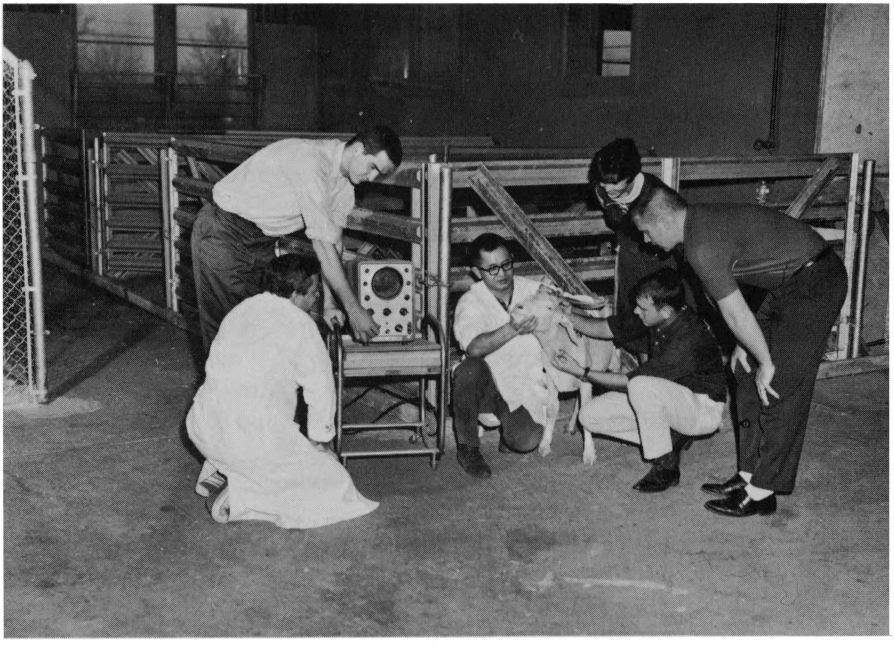
WOMEN'S AUXILIARY TO THE AMERICAN VETERINARY MEDICAL ASSOCIATION. A certificate and $50 are presented to the fourth year student who does the most to advance the school and the profession on the campus.

MOSS ESSAY CONTEST. Sponsored by the American Animal Hospital Association. Winners of the first place receive $25, second place, $15, and third place, $10.

Student Employment

Many students work part time while attending school. Because of the large number of classroom and laboratory hours required of veterinary medical students, it is recommended that outside work be kept at a minimum, especially during the first year.

Some students are employed on research projects and in laboratories and clinics. Other students find board or board and room employment. The Student Employment Office, a division of the Office of Aids and Awards, 123 Jesse Hall, provides information and assistance to students seeking part-time work.



Demonstration animals are used in many courses, some of which are available to students enrolled in other divisions of the University.

ORGANIZATIONS

Student Chapter of the American Veterinary Medical Association:

Activities of students in the School of Veterinary Medicine are centered in the student chapter of the American Veterinary Medical Association. Such chapters are to be found at all of the veterinary medical schools in the United States and Canada.

Activities of the student chapter at Missouri include monthly meetings at which there is usually a guest speaker and chapter business is transacted. Other activities include a picnic by the second year class to welcome the incoming class, a smoker at which new students and faculty members are welcomed by the other three classes, an all-school party and dance, a spring all-school picnic, and the annual banquet to honor the graduating class, followed by an all-school dance. The chapter finances these activities by earning a percentage of sales of refreshments at all home varsity football games. Each member contributes time to help with these sales at a designated number of games.

From this income the student chapter has been paying chapter dues and journal subscriptions for its members. It has supported the social functions and has paid rental costs on caps and gowns for graduating seniors. The student chapter publishes three issues per year of their official journal, "The Missouri Veterinarian."

The chapter also maintains loan funds for its members, finances the trip of its delegate to national meetings, and frequently helps the women's auxiliary to the student chapter with its financial problems.

The publication staff of the Missouri Veterinarian, a student-produced professional publication.

Pre-Veterinary Medicine Club

Students on the Columbia campus engaged in pre-veterinary medical study are eligible for membership to this club. A member of the faculty of the School of Veterinary Medicine acts as faculty advisor. Regular meetings are held with speakers discussing various aspects of the profession. One objective of the club is to bring about a closer fellowship among students who have a common interest in seeking admission to the School of Veterinary Medicine.

Alumni Association

Alumni of the School have formed the University of Missouri School of Veterinary Medicine Alumni Association. Activities include the maintenance of a loan fund for students, maintaining a mutually beneficial contact with the School through a liaison committee, contributions to the Achievement Fund and presentations of portraits of deceased and retired faculty members to the School.

Phi Zeta Society

This is a scholastic honorary society to which V.M. 3 and V.M. 4 students may be elected. It provides a means of recognizing outstanding scholarship within the professional school.

Women's Auxiliary to the Student Chapter of the American Veterinary Medical Association.

Wives of students in the School have their own organization which holds monthly meetings and carries out a program of activities. Guest speakers discuss subjects related to the profession, homemaking and other topics.

STUDENT CONDUCT

Training the student to enter the profession of veterinary medicine must necessarily involve more than the transmitting of scientific facts. The veterinarian may use his knowledge most effectively and provide the greatest benefit when he maintains a dignity befitting his level of scientific training. Throughout the course of study, students are expected to acquire an indelible appreciation of professionalism. Students wear white shirts and ties in all lecture classes and prescribed dress in laboratory periods.

Honor System

Honesty is an essential part of professionalism. The Honor System places the responsibility for honor and honesty on the student. Examinations are not supervised, and the expensive equipment used in clinics and laboratories is made available for most effective teaching use with the understanding that the candidate for the D. V. M. degree need not be policed by faculty members.

Any student guilty of inadequate integrity may be dropped from school. Reported violations of the Honor System are carefully investigated and every precaution is taken to arrive at a just decision.

Anyone unwilling to accept the responsibility for maintaining the Honor System should not apply for admission to the School of Veterinary Medicine.

Withdrawal and Re-Admission

Any student who withdraws from the School of Veterinary Medicine, or is eliminated for cause, must apply for re-admission and be interviewed by the Committee on Admissions.

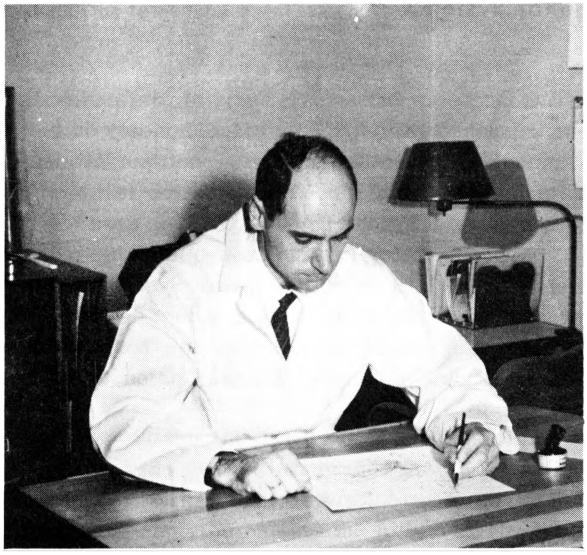
Students who have been dropped because of unsatisfactory grades, if re-admitted, must report each course in which they received a grade below "C". This applies to courses being taken during the semester in which they were dropped.

RESEARCH AND GRADUATE PROGRAM

Graduate training leading to the Master of Science degree is offered by all departments in the School of Veterinary Medicine. The departments of Anatomy, Microbiology and Physiology also offer graduate programs leading to the Doctor of Philosophy degree in their respective disciplines.

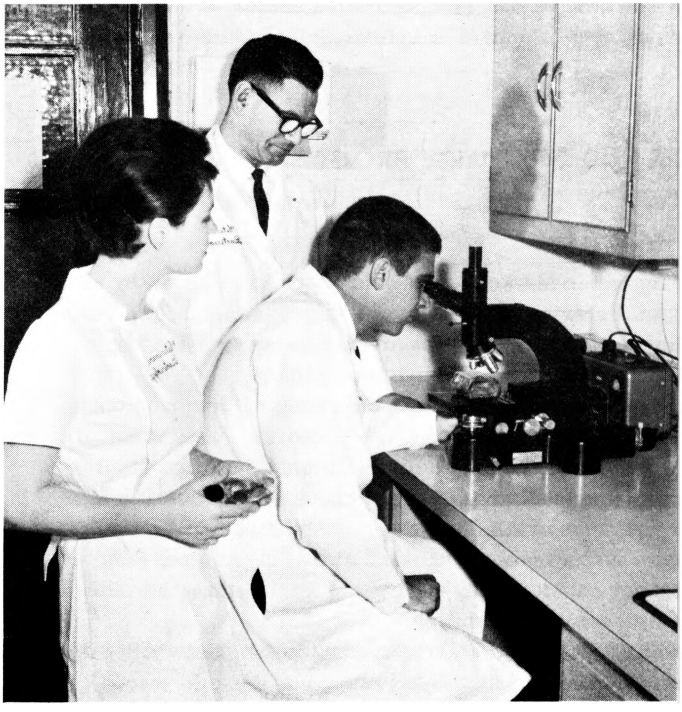
The graduate programs are designed to meet the changing demands upon the veterinary profession in teaching, animal disease research, basic medical research and research in human health-related areas. Highly qualified faculty members in each department serve as advisors for graduate student training, and well-equipped laboratories are available for graduate student research. Courses for graduate students in veterinary medicine are offered in the School of Veterinary Medicine, School of Medicine, College of Agriculture and other schools and colleges in the University system.

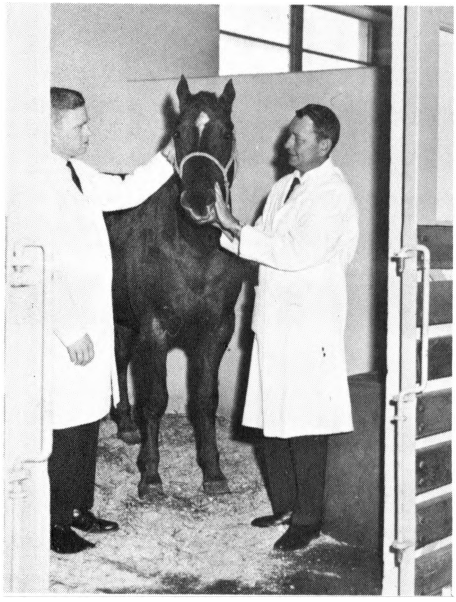
For further information, consult the Graduate Bulletin, University of Missori, School of Veterinary Medicine.



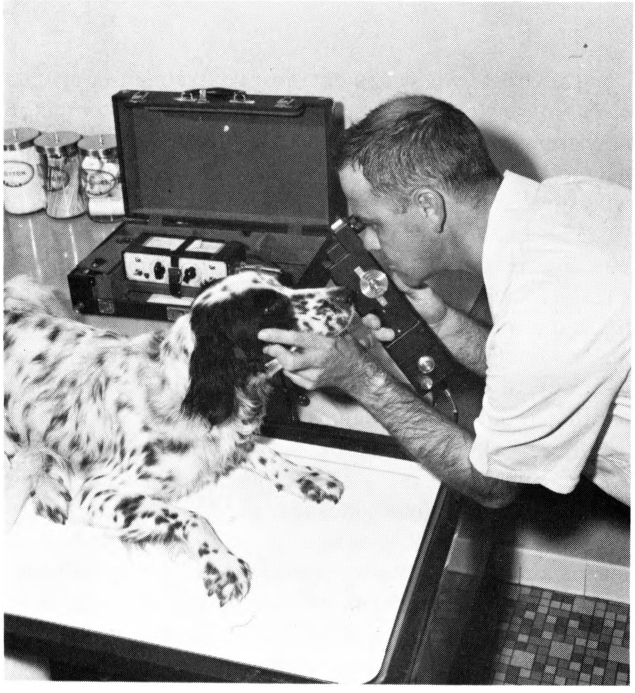
Medical Illustrator. Each department maintains a library of visual aids to enhance classroom presentations.

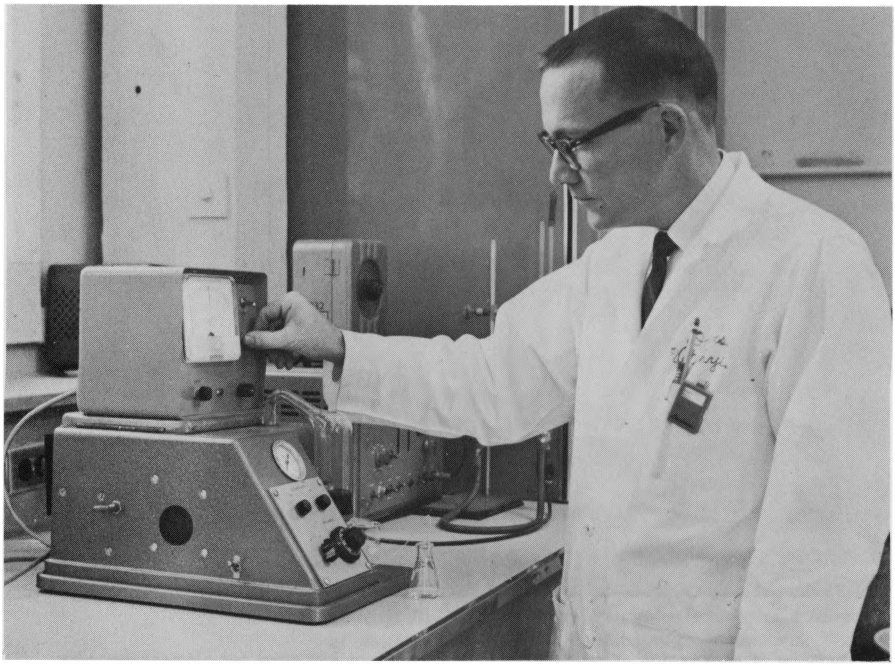
Graduate student training programs are expanding to meet an increasing demand for specialists.





(Above) A succession of patients provides abundant material for clinical teaching.
(Below) "Man's best friend" has an ophthalmological examination.





Staff research complements undergraduate instruction.

THE PROFESSIONAL PROGRAM

The first two years of the professional curriculum are devoted largely to basic professional subjects, such as anatomy (gross and microscopic), biochemistry, physiology, bacteriology, parasitology, pathology and pharmacology. These courses are the foundation for the applied work for the final two years.

The third year represents a transitional stage in the training of the professional student. The courses are of semi-applied and applied nature and form a bridge between the fundamental work of the first two years and the clinical work of the fourth year. The courses of the final two years include pharmacology, general and specialized surgery, diseases of small animals, diseases of large animals, reproductive problems and obstetrics, public health and clinical and laboratory practice.

The major portion of the instruction in the fourth year is in the laboratory and clinic. This affords the student an opportunity to apply knowledge acquired in previous courses to the diagnosis, treatment and prevention of animal diseases. Courses in radiology, poultry diseases, infectious diseases of large animals, public health, jurisprudence, business methods and ethics, clinical conferences and seminars complete the formal education.

The third and fourth year classes are divided into groups with rotating assignments in the various clinical areas. The ambulatory, or out-clinic, is an assignment through which fourth year students are periodically rotated for

field experience. Designated faculty members maintain vehicles equipped for rural calls. Students accompany and assist these veterinarians to acquire valuable practical training on farms in the Columbia area. In addition to diagnosis and treatment experience, attention is also given to herd health programs, nutrition and breeding programs. There is participation in testing and eradication programs to acquaint students with regulatory procedures. The varied livestock programs in the immediate area provide a good environment for study of management practices of dairy cattle, beef cattle, swine, sheep and pleasure horses. Classes also visit commercial, pharmaceutical and biological laboratories, meat and poultry packing plants and livestock markets.

Requirements for Graduation

To earn the degree, Doctor of Veterinary Medicine (D.V.M.), a student must complete the courses in the order listed in the curriculum. Earlier courses are prerequisites for succeeding courses.

A student is required to have a cumulative average of 2.00 (C) or better in the first two years of the curriculum before he can be promoted to the third year.

Since animals are frequently used as "stand-ins" for man, the veterinarian is in demand in biomedical research.

Course Numbers

The designation of the courses indicates the department offering the course and in a general way the level of instruction.

1 to 99 courses are for students outside the School of Veterinary Medicine. These courses are primarily for freshmen and sophomore students in other divisions of the University.

100 to 199 courses are primarily for junior and senior students in divisions other than the School of Veterinary Medicine. They carry no graduate credit.

200 to 299 courses include all of the courses in the regular professional curriculum. They may be taken by graduate students whose graduate major is not in the department in which the course is given.

300 to 399 courses are for undergraduate and for graduate students without restriction as to a student's graduate major.

400 to 499 courses are primarily for graduate students.

V-designation. When the course number is followed by the letter "V", as 271V, this indicates that the course is only available to students following the regular professional curriculum of the School of Veterinary Medicine.

Credit

The unit of credit is the semester hour which represents a subject pursued one period per week for one semester of approximately 16 weeks or for total of approximately 16 periods for one term. In general, a course valued at three semester hours meets for three periods a week for one semester.

Following the title of the course the number of hours of credit is given in parentheses; thus Clinics (3). If the credit is variable, to be fixed in consultation with the teacher, that fact is indicated by cr. arr. (credit to be arranged).

Semester Designation

The small letters, following the title of the course and the credit it carries, indicate the semester the course is to be offered. Thus, f indicates the course is to be offered in the first or fall semester and w indicates the second or winter semester.

Professional Curriculum

First Year

FALL	Hours	WINTER	Hours
Agr. Chem. 210 Gen. Agr. Chem	5	VA204 Microscopic Anatomy	4
VA203 Microscopic Anatomy	2	VA212 Gross Anatomy	5
VA207 Developmental Anatomy	2	VPh220V Physiology	5
VA211 Gross Anatomy	6	VMi241V General Microbiology	3
VA218 Neuroanatomy	2		17
VA201V Prof. Orient. & Hist.	R		
	17		

Second Year

VMi242 Path. Microbiology	4	VMi246V Parasitology	3
VMi245 Parasitology	5	VPa232V Pathology	5
VPa231V Pathology	5	VPa234V Clinical Pathology	2
VPh221V Physiology	5	VPh226V Pharmacology	5
	19	VMS276V Physical Diagnosis	2
		VMi243 Veterinary Virology	2
			19

Third Year

VA215V Applied Anatomy	1	VA216V Applied Anatomy	1
VMS251V General Surgery	3	VMS252V Sm. An. Surgery	3
VMS255V Radiology	2	VMS262V Sp. Lge. An. Med.	5
VMS261V Gen. Lg. An. Med.	5	VMS266V Obstetrics	3
VMS263V Sm. An. Med.	3	VMS272V Clinics	3
VMS271V Clinics	3	VPa236V Meat Hygiene	3
VMi240 Avian Diseases	3	VMS264V Sm. An. Med.	3
	20		20

Fourth Year

VMi249 Vet. Pub. Health	3	VMS256 Toxicology & Pois. Plants	3
VMS253V Lg. An. Surg	3	VMS282V Jurisprudence & Ethics	1
VMS267V Reproductive Diseases	5	VMS284V Clinical Conf.	1
VMS273V Clinics	7	VMS274V Clinics	8
VPh223V Veterinary Nutrition	3	BPA204V Applied Bus. Methods.	2
	21	VMS278V Practical Application of Clin. Med & Surg. Procedures	3
			18

VETERINARY ANATOMY

The teaching and research facilities of the Veterinary Anatomy Department are located in Connaway Hall. Teaching facilities include a laboratory for gross anatomy dissection and another laboratory for the study of microscopic, developmental and neuroanatomical specimens.

A multiple radiograph viewer and a collection of radiographs are utilized in teaching gross and applied anatomy. A complete disarticulated dog skeleton in a case is loaned to each first year veterinary medical student for the course in gross anatomy. Microscopic slide sets are loaned to students in the microscopic, developmental and neuro-anatomy courses. The department utilizes modern projection equipment and projection slides from a growing departmental visuals collection in its teaching program.

Research facilities include laboratories for the preparation of anatomical specimens for microscopic and gross study. A suite for experimental research requiring surgical and recording procedures is under construction, as are research animal quarters. Tissue culture facilities are also found in the department.

Current research projects are concerned with mammalian ova culture, interrelations of the nervous system and the endocrine and genital systems, tooth development and comparative studies dealing with the nervous and cardiovascular systems.

Elective courses and graduate programs leading to the M.S. and Ph.D. degrees are available in those areas where research facilities exist and active staff research is in progress.

200 PROBLEMS (cr. arr.) f,w,s.
Assignment of special problems for training in research in gross or microscopic anatomy or histology. Staff

201V PROFESSIONAL ORIENTATION AND HISTORY (R) f.
Introduction to the veterinary medical profession; history; professional conduct and ethics. McClure & guest lecturers.

203 MICROSCOPIC ANATOMY (2) f. (formerly 105)
Prerequisite: registration in Vet. Med. School or dept. consent. Study of cytology and histology of domestic animals. Dellman & Staff.

204 MICROSCOPIC ANATOMY (4) w. (formerly 115)
Prerequisite: 203 & 207. Detailed, systematic microscopic study of organology of domestic animals. Dellmann & Staff

207 DEVELOPMENTAL ANATOMY (2) f.
Prerequisite: registration in Vet. Med. School or dept. consent. Should accompany 211. Developmental anatomy of domestic animals based primarily on study of chick and pig embryos. McClure & Staff.

211 GROSS ANATOMY (6) f. (formerly 100)
Prerequisite: registration in Vet. Med. School or dept. consent. Should accompany 207. Systematic, detailed study of canine anatomy by means of lecture, discussion and dissection of the dog. McClure & Staff.

212 GROSS ANATOMY (5) w. (formerly 110)
Continuation of 211. Prerequisite: 211. Comparative Anatomy with dis-

section of the horse, ox, sheep, goat, pig, cat and chicken. McClure & Staff.

215V APPLIED ANATOMY (1) f. (formerly 172)
Prerequisites: 204 & 212 & third year standing in Vet. Med. or dept. consent. Topographical, comparative and clinical consideration of the anatomical features requisite for diagnostic, surgical, obstetrical and autopsy procedures in veterinary medicine. Radiographs, dissections, models and prepared specimens supplement study of live animals. McClure & Staff.

216V APPLIED ANATOMY (1) w.
Continuation of 215V.

218 VETERINARY NEUROANATOMY (2) f.
Prerequisite: 203 & 211 or dept. consent. Study of functional gross and microscopic anatomy of the central nervous system: peripheral connections including organs of the special senses. McClure & Staff.

219 ELEMENTS OF VETERINARY ANATOMY (3) f. (formerly 101).
Prerequisite: 5 hrs. of gen. zool. or equiv. For agricultural and other students desiring a basic knowledge of anatomical terminology and comparative functional anatomy (developmental, microscopic and gross) of domestic animals. Romack.

Courses 303, 304, 307, 311 and 312 open only to graduate students who have requisite background in biological and departmental approval.

303 CYTOLOGY AND HISTOLOGY OF DOMESTIC ANIMALS (2) f.
Detailed study of cytology and histology of domestic animals through lecture and lab. study. Special written report and/or review required. Staff.

304 MICROSCOPIC ORGANOLOGY OF DOMESTIC ANIMALS (4) w.
Prerequisite: 303. Detailed study of microscopic anatomy of the organ systems of domestic animals. Special written report and/or review required. Staff.

305 HISTOLOGICAL AND ANATOMICAL TECHNIQUES (cr. arr.) f,w,s.
Prerequisites: background in chem. & anatomy & consent of instr. Detailed study and practice of techniques used in preparation of specimens for microscopic and macroscopic study. Staff.

307 EMBRYOLOGY AND DEVELOPMENT OF DOMESTIC ANIMALS (2) f.
Should accompany 311. Study of developmental anatomy of domestic animals. Special written report and/or review required. Staff.

311 CANINE DISSECTION (6) f.
Study of gross anatomy of the dog by lecture, dissection and discussion. Special written report and/or review required. Staff.

312 ANATOMY OF COMMON DOMESTIC ANIMALS (5) w.
Prerequisite: 311 or equiv. Study of gross anatomy of horse, ox, sheep, pig, cat and chicken; particular attention to areas of veterinary medical importance. Special written report and/or review required. Staff.

319 SYSTEMATIC ANATOMY (5) w.
Prerequisites: 5 hrs. zool. science & consent of instr. For graduate and advanced undergraduates in the biological sciences. Systematic study of

gross anatomy of domestic animals; dissection of dog, pig and/or sheep; demonstration species of other domestic animals. McClure & Staff.

400 PROBLEMS (cr. arr.) f,w,s.
Selected problems and/or topics for advanced study in special areas to meet needs of individual students. Staff.

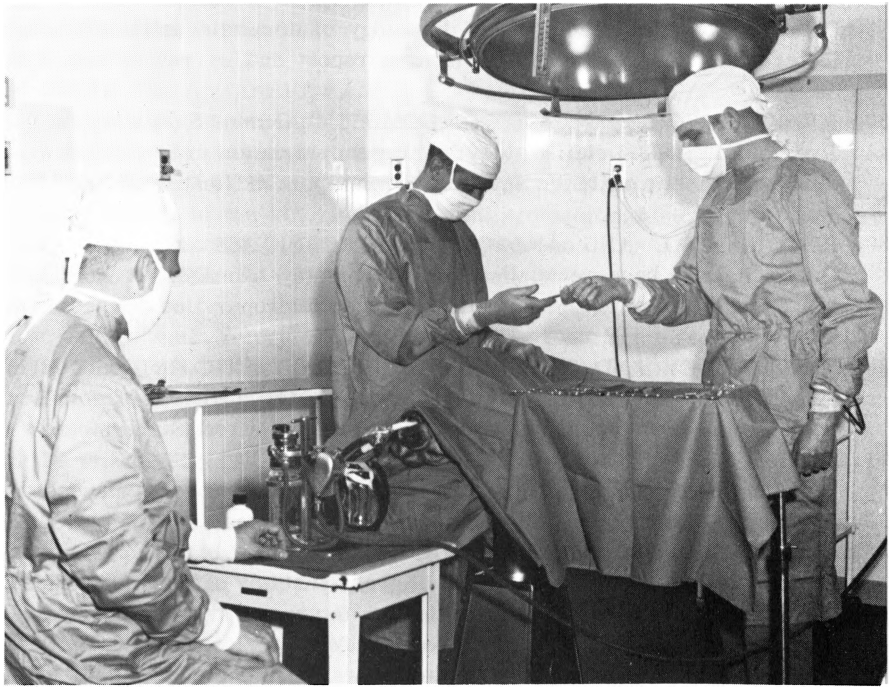
409 ADVANCED VETERINARY MICROSCOPIC ANATOMY (cr.arr.) f,w,s.
Prerequisite: dept. consent. Advanced microscopic study of animal tissue preparations. Staff.

410 SEMINAR IN VETERINARY ANATOMY (1) f,w.
Prerequisite: dept. consent. Presentation and discussion of investigations and topics in Veterinary Anatomy or related fields; by qualified students, instructors and guests. McClure.

419 ADVANCED VETERINARY GROSS ANATOMY (cr. arr.) f,w,s.
Prerequisite: dept. consent. Topographical and systematic dissection and study of areas as related to Veterinary Medicine and Surgery. McClure & Staff.

450 RESEARCH (cr. arr.) f,w,s.
Open to graduate students with requisite preparation. Research in Veterinary Anatomy not to terminate in thesis. Staff.

490 RESEARCH (cr. arr.) f,w,s.
Open to graduate students with requisite preparation. Research to be presented as a thesis. Reading knowledge of French and/or German desirable. Staff.



Modern surgery gives maximum patient care and student training under supervision of staff specialists.

VETERINARY MEDICINE AND SURGERY

This department provides four major functions: undergraduate instruction, graduate instruction, research and service.

Undergraduate instruction emphasizes the practical application of scientific facts students have acquired during prior academic training. This is accomplished by formal lectures and by laboratories using University-owned animals. In additon, and of special value, is the instruction and experience provided through the diagnosis and treatment of patients presented to the Clinic and of animals on farms in the Columbia area. There is a good variety of species and health problems represented in the daily accessions. In order to study under specialists in each clinical area, students are rotated through such assignments as Small Animal Clinics, Large Animal Clinics, Ambulatory, Obstetrics and Radiology.

Graduate work leading to the Master of Science degree is available in this department.

310 ADVANCED TECHNIQUES IN RADIOLOGY (cr. arr.) f,w,s.
Prerequisite: D.V.M. Special application to domestic animals. Case.

320 ADVANCED SURGICAL TECHNIQUES (cr. arr.) f,w,s.
Prerequisite: D.V.M. Special application to large, small animals. Ebert, Niemeyer.

330 ADVANCED STUDIES OF POISONOUS PLANTS AND TOXICOLOGY (cr. arr.) f,w,s. Prerequisite: D.V.M. Case.

450 RESEARCH (cr. arr.) f,w,s.
Open to qualified grad. students.

490 RESEARCH (cr. arr.) f,w,s.
Open to qualified grad. students.

251V GENERAL VETERINARY SURGERY (3) f.
Basic principles of vet. surgery with lab. application. Pearson.

252V VETERINARY SURGERY (3) w. (formerly 168)
Contin. of 251 V. Emphasis on small animals. Pearson.

253V VETERINARY SURGERY (3) f.
Contin. 251V & 252V. Emphasis on large animals. Ebert & Tritschler.

255V VETERINARY RADIOLOGY (2) f. (formerly 164)
Basic fundamentals in use of X-ray equipment. Case.

256V TOXICOLOGY AND POISONOUS PLANTS (3) w.
Plants toxic to animals; includes other toxic substances. Case.

261V VETERINARY MEDICINE (5) f. (formerly 166)
Detailed study of diseases of large animals, their diagnosis, prognosis, treatment, care. McGinity.

262V VETERINARY MEDICINE (5) w.
Infectious diseases of farm animals; relationship to public health. McGinity.

263V VETERINARY MEDICINE (3) f.
Diseases of small animals, diagnosis, treatment, care. Niemeyer.
(263V and 264V formerly taught as one 5 hr. course 263V)

264V VETERINARY MEDICINE (3) w.
Contin. of 263V.

266V VETERINARY OBSTETRICS (3) w.
Normal, abnormal parturition in large animals. Bierschwal.

267V REPRODUCTIVE DISEASES OF LARGE ANIMALS. (5) f.
Diseases of reproductive organs, causes, control, treatment. Bierschwal.

271V VETERINARY CLINICS (3) f.
Practical application of diagnosis, treatment of clinical problems. Staff.

272V VETERINARY CLINICS (3) w.
Contin. of 271V. Staff.

273V VETERINARY CLINICS (7) f.
Contin. of 272V. Staff.

274V VETERINARY CLINICS (8) w.
Contin. of 273V. Staff.

276V PHYSICAL DIAGNOSIS (2) w. (formerly 277)
Methods, procedures to determine condition, health of patient. Eagle.

278V PRACTICAL APPLICATION OF CLINICAL MEDICINE AND SURGERY PROCEDURES (3) s.

282V JURISPRUDENCE & ETHICS (1) w.
Medical economics, veterinary ethics, laws pertaining to practice of Veterinary Medicine. Kingrey.

284V CLINICAL CONFERENCE (1) w.
Discussion of clinical patients. Staff.

VETERINARY MICROBIOLOGY

Course offerings consist of instruction at the undergraduate and graduate level. Subject matter is diversified as indicated by the following primary areas of instruction: Microbiology, Virology, Parasitology, Public Health and Avian Diseases.

Most of the courses offered require a certain amount of time to be spent in the laboratory. Four laboratories including one student laboratory familiarize the student with various procedures associated with lecture material. Laboratory instruction varies from the simple procedure of inoculating culture media to the recovery and recognition of virus.

Research is conducted by members of the department in the areas of host parasite relationship, serological diagnosis of hog cholera, leptospirosis, the arthritis-synovitis complex, histomoniasis, vibriosis and the isolation and cultivation of Trichomonas foetus.

Undergraduate courses for professional students; graduate courses for the M.S. degree and Ph.D. are offered in this department.

107 POULTRY HYGIENE (2) alt. f.
Prerequisites: Vet. Anat. 219 and Botany 202. Preventive measures for control of poultry diseases, parasites. McCune.

200 PROBLEMS (cr. arr.) f,w,s.
Studies in special phases of veterinary microbiology. Staff.

300 PROBLEMS (cr. arr.) f,w,s.
Prerequisite: grad. standing in Biol. Sci. or Vet. Med. Staff.

301 TECHNIQUES IN VETERINARY PARASITOLOGY (3) w.
Prerequisite: grad. standing in biol. sciences of Vet. Med. Study and application of methods used in parasitological investigations. Shelton.

304 ADVANCED TECHNIQUES IN VETERINARY MICROBIOLOGY (3).
Prerequisite: grad. standing in biol. sciences of Vet. Med. Loan, Blenden.

402 ADVANCED VETERINARY MICROBIOLOGY (3).
Prerequisite: grad. standing in biol. sciences or Vet. Med. Blenden, Loan, Staff.

404 ADVANCED VETERINARY PARASITOLOGY (3) f.
Prerequisite: grad. standing in biol. sciences or Vet. Med. Shelton, Staff.

410 SEMINAR (1) f,w.
Open to grad. students in vet. med. & allied biol. sci. Study and discussion of research in animal, poultry diseases. Staff.

490 RESEARCH (cr. arr.) f,w,s.
Nutrition, metabolic activities, pathogenesis of disease producing agents of animals, poultry. Staff.

240 AVIAN DISEASES (3) w. (formerly 240V)
Diagnosis and treatment of diseases; parasites of poultry. McDougle.

241V GENERAL VETERINARY MICROBIOLOGY (3) w
Introductory course in fundamentals of microbiology, immunology as applied to veterinary medicine, public health. Blenden, Loan.

245 VETERINARY PARASITOLOGY (5) f. (formerly 243V)
Classification, morphology, bionomics of protozoa, helminths, arthropids. Partly devoted to the study of parasitic disease of ruminants. Shelton.

242 VETERINARY MICROBIOLOGY (4) f. (formerly 246V)
Pathogenic microorganisms of animals; relationship to public health; considers pathogenesis, immunology of infections. Loan.

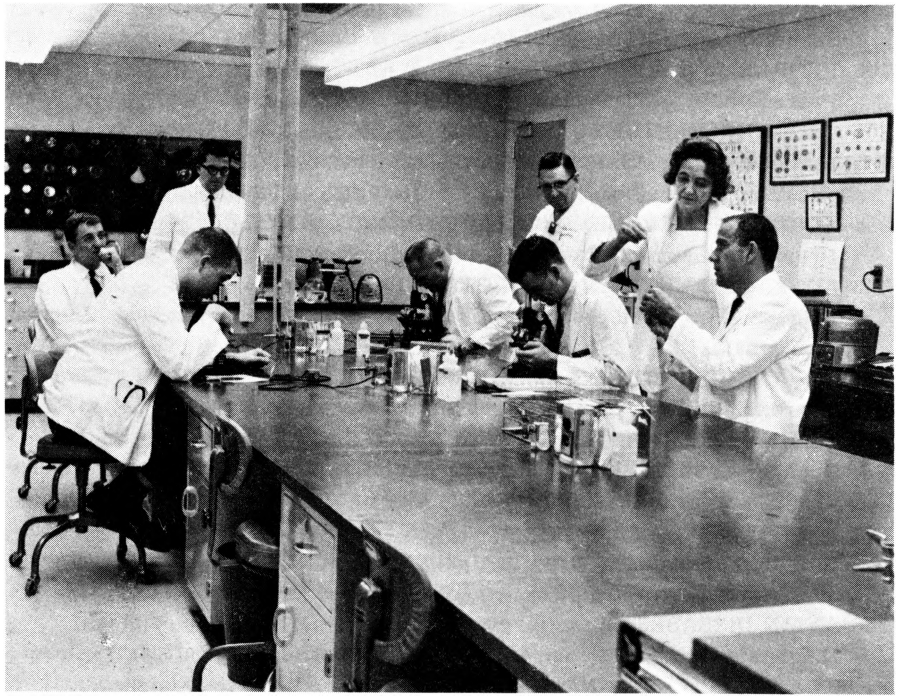
243 VETERINARY VIROLOGY (2) w
Classification, characteristics, and properties of viruses. Considers the etiologic, pathogenetic, and immunologic aspects of viral diseases of animals. Loan.

246V VETERINARY PARASITOLOGY (3) w. (formerly 248V)
Parasites and parasitic diseases of horses, swine, dogs, cats, poultry. Shelton.

249 VETERINARY PUBLIC HEALTH (3) f. (formerly 249V)
Epidemiology and transmission of infectious diseases of animals and man; environmental sanitation and comparative medicine. Blenden.

VETERINARY PATHOLOGY

The Department of Veterinary Pathology serves the School of Veterinary Medicine in the areas of teaching, diagnosis and research. The teaching pro-



In the Clinical Pathology Laboratory specimens are examined to facilitate precise diagnosis.

gram for veterinary students embraces courses in basic principles of animal pathology, special or systemic pathology, clinical pathology, veterinary meat hygiene and specific instruction in necropsy procedures and the diagnosis of animal diseases. The department participates in the course entitled Animal Science that is also offered to students of the School of Agriculture. Special course work also is offered for credit toward the Master's Degree in pathology.

Course work includes advanced histopathology, advanced diagnostic methods including surgical pathology and necropsy techniques, special techniques in pathology, advanced clinical pathology and problems in which assignment of special topics for research training in veterinary pathology are available. Joint seminars are held between this department and the Department of Pathology in the School of Medicine in order to discuss current material from this necropsy area and to emphasize disease conditions from a comparative pathology standpoint.

This department is responsible for the diagnostic work carried on in the School of Veterinary Medicine. More than 5,000 cases were processed through the necropsy and clinical areas during the past year.

Current research activity includes studies on respiratory diseases of cattle, enteritis of swine and, in cooperation with the Department of Veterinary Microbiology, studies of the immune response of swine to various hog cholera vaccines.

230 ANIMAL SANITATION AND DISEASE PREVENTION (3) f,w.
Prerequisite: Vet. Anat. 219 or Vet. Physiol. 222, Preventive measures for diseases and parasites of farm animals. Rodabaugh.

231V VETERINARY PATHOLOGY (5) f.
Detailed study of manifestations of disease producing agents. Morehouse, Kintner, Strafuss.

232V VETERINARY PATHOLOGY (5) w.
Contin. of 231V. Special attention to specific tissues and organs. Morehouse, Kinter, Strafuss.

234V VETERINARY CLINICAL PATHOLOGY (2) w.
Lab. methods in diagnosis of disease. Berrier, Moseley.

236V VETERINARY MEAT HYGIENE (3) w.
Meat, meat products in relation to public health. Basic phases of meat and poultry inspection. Strafuss.

200 Problems (cr. arr.) f,w,s.
Assignment of special topics for research training in veterinary pathology. Staff.

300 PROBLEMS (cr. arr.) f,w,s.
Prerequisite: D.V.M. & dept. consent. Staff.

305 TECHNIQUES IN PATHOLOGY (cr. arr.) f,w.
Prerequisite: 10 hrs. chem. Methods and techniques in fixing, preparing, staining pathological specimens. Strafuss, Kintner, Morehouse.

410 SEMINAR (1) f,w.
Study and discussion of research in animal diseases. Open to grad. students in vet. med. and allied biological fields. Staff.

415 ADVANCED VETERINARY PATHOLOGY (3-5) f,w.
Prerequisite: dept. consent. Specific assignments on diagnostic methods including surgical pathology, necropsies, toxicology. Kintner, Strafuss.

420 ADVANCED HISTO-PATHOLOGY (5) f,w.
Prerequisite: dept. consent. Advanced microscopic study of pathological tissues. Staff.

425 VETERINARY ONCOLOGY (3) f,w.
Prerequisite: dept. consent. Study of animal neoplasms. Kintner, Morehouse.

430 ADVANCED CLINICAL PATHOLOGY (2-4) f.
Prerequisite: dept. consent. Lab. techniques, their application to diagnosis of animal diseases. Berrier.

490 RESEARCH (cr. arr.) f,w,s.
Open to qualified graduate students. Research on specific animal diseases, prevention and treatment. Staff.

VETERINARY PHYSIOLOGY AND PHARMACOLOGY

Physiology and pharmacology are an integral part of the professional training of veterinarians, and students in the School of Veterinary Medicine take course work in this department during both their freshman and sophomore

years. In addition, course work is offered to students from other divisions of the University.

Because physiology and pharmacology are fundamental to present day biology, students with a diversity of interests include such course work in their educational program. The information and techniques acquired in these courses are utilized in some degree in almost every field of animal science including, among others, agriculture, zoology, biochemistry, psychology, wildlife management, nutrition and endocrinology. This is especially true with the present sophistication of biological instrumentation. Physiology and pharmacology bridge the gap between the animate and the inanimate, between physics and chemistry on the one hand, biology and medicine on the other.

Research in this department is oriented toward comparative physiology and pharmacology and includes projects in the antigenicity of tissues and cells, metabolism of analgesic drugs, renal function and energy metabolism. For graduate students not uniquely interested in man a program of study leading to either the M.S. or Ph.D. degree can be arranged. In addition, a limited number of undergraduate and graduate students who do not intend to major in this department but who have special interest in some aspect of physiology or pharmacology enroll for special problems and pursue individual studies under the supervision of a staff member.

200 PROBLEMS (cr. arr.) f,w,s.
Assigned problems for research training. Dale.

220 VETERINARY PHYSIOLOGY (5) w.
Physiology of muscle, nervous, circulatory, respiratory systems. Lecture, lab. emphasize principles important to practice of veterinary medicine. Dale, Beckett, Crenshaw.

221 VETERINARY PHYSIOLOGY (5) f.
Continuation of 220. Digestion, excretion, endocrinology and reproduction. Dale, Beckett, Crenshaw.

222 FUNDAMENTALS OF ANIMAL PHYSIOLOGY (3) f.
For students not in Vet. Med. Sch. Relationship of structure and functions in common domestic animals. Study of intercellular material, cells, tissues, organs, systems. Lectures supplemented with slides, movies, demonstrations. Crenshaw.

223V VETERINARY NUTRITION (3) f.
Veterinary aspects of animal nutrition. Weinman.

226V VETERINARY PHARMACOLOGY (5) w.
General principles of pharmacology and prescription writing. Systematic study of drugs commonly employed in veterinary practice. Particular emphasis on Pharmacodynamics. Davis.

326 VETERINARY PHARMACOLOGY (5) w.
General principles of pharmacodynamics in domesticated animals. Davis.

420 VETERINARY PHYSIOLOGY (5) w.
Prerequisites: Agr. Chem 302 or equiv. Systematic physiology for graduate students with primary interest in animals other than man. Function of nerve, muscle, circulatory and respiratory systems. Dale, Beckett, Crenshaw.

421 VETERINARY PHYSIOLOGY (5) f.
Contin. of 420. Digestion, excretion, endocrinology, reproduction. Dale, Beckett, Crenshaw.

450 RESEARCH (cr. arr.) f,w,s.
Physiological investigations not for thesis. Staff.

490 RESEARCH (cr. arr.) f,w,s.
Physiological investigations to be published as thesis. Staff.

THE FACULTY

ELMER ELLIS, A.B., A.M., North Dakota; Ph.D., Iowa; LL.D. North Dakota, Central Methodist, Drury. President of the University.

FREDERICK A. MIDDLEBUSH, A.B., A.M., Ph.D., Michigan; LL.D., Knox, Hope, Michigan. President Emeritus of the University.

JOHN W. SCHWADA, B.S. Northeast Missouri State College; A.M., Missouri; Ph.D., Texas. University Chancellor, Columbia campus.

BURNELL W. KINGREY, D.V.M., M.S., Iowa State. Dean, School of Veterinary Medicine; Professor of Veterinary Medicine and Surgery.

A. HOLLAND GROTH, B.S., D.V.M., Iowa State; M.S., Colorado State. Dean Emeritus, School of Veterinary Medicine; Professor of Veterinary Pathology.

Department of Veterinary Anatomy

ROBERT C. McCLURE, D.V.M., Iowa State; Ph.D., Cornell. Professor and Chairman.

JOSEPH E. WEINMAN, D.V.M., Kansas City Veterinary College. Professsor Emeritus.

HORST D. DELLMANN, D.V.M., Alfort; Ph.D., Munich. Associate Professor.

FRANK E. ROMACK, B.S., M.S., Ph.D., Missouri. Assistant Professor.

PHILLIP D. GARRETT, B.S., D.V.M., M.S., Missouri. Assistant Professor.

Department of Veterinary Bacteriology and Parasitology

HAROLD C. McDOUGLE, B.S., A.M., Missouri; D.V.M., Michigan State. Professor and Chairman.

ADRIAN J. DURANT, B.S., A.M., Missouri; D.V.M., Michigan State. Professor Emeritus.

LESLIE C. MURPHY, B.S., Idaho; D.V.M. Washington State. Professor and Director of Research Development.

GEORGE C. SHELTON, D.V.M., Texas A & M; M.S., Auburn. Professor and Assistant to the Dean.

DONALD C. BLENDEN, B.S., M.S., D.V.M., Missouri. Associate Professor.

FREDERICK W. CLAYTON, D.V.M., Ohio State; M.P.H., Tulane. Assistant Professor.

RAYMOND W. LOAN, B.S., D.V.M., Washington State; Ph.D., Purdue. Associate Professor.

EMMETT L. McCUNE, B.S., D.V.M., M.S., Missouri. Assistant Professor.

BRUCE D. ROSENQUIST, D.V.M., Iowa State. Research Associate.

ROBERT N. YOSHIMORI, B.A., Iowa; M.S., Missouri. Research Assistant.

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Department of Veterinary Medicine and Surgery

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